

REMARKS

By this amendment, claims 1, 7, 8, and 12 are canceled, claims 2, 3, 5 and 6 are revised, and new claims 16-18 are added to place this application in immediate condition for allowance. Currently, claims 2-6, and 9-11, and 13-18 are before the Examiner for consideration on their merits.

First, the revision to claim 2 and the addition of new claims 16-18 are fully supported by the specification as filed. The claim 2 revision may find support on page 7, line 13 to page 8, line 16. Claim 16 is found on page 8, lines 3-9. Claim 17 is found on page 8, lines 10 and 11. Claim 18 is found on page 8, lines 1 and 2. The revisions to claims 3 and 6 are made to provide consistency with the change to claim 2. Claim 12 is canceled as being a duplicate of claim 6, and the product claims 7 and 8 are also canceled.

Turning now to the prior art rejection, claims 1, 2, 5-9, 12, and 15 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by United States Patent No. 5,977,017 to Golden, or in the alternative, obvious under 35 U.S.C. § 103(a) based on Golden and United States Patent Nos. 6,632,524 to Toshima et al. (Toshima) and 6,827,917 to Ward et al. (Ward).

For the anticipation rejection, the Examiner treats the claimed amorphous substance as a product by process limitation, thus ignoring the processing steps. With this stance, the Examiner contends that the precursor of Golden is amorphous and the same as that claimed. Alleging that the remaining process steps are taught by Golden, anticipation exists according to the Examiner.

Concerning the limitation regarding the noble metal, the Examiner appears to ignore the processing limitations in this regard and conclude that the end product of Golden is the same as that claimed.

In the obviousness rejection, the Examiner admits that Golden does not teach the precipitating steps but relies on Toshima to contend that such processing is known. Ward is cited to allege that adding a precipitate to a mixture of elements is known. With Toshima and Ward, the Examiner concludes that it would be obvious to "provide forming a precipitate comprising mixing an alkaline aqueous solution with an aqueous solution of an element in Golden in order to form a precipitate that is a precursor for a perovskite as taught by Toshima or Ward.

A second rejection is made under 35 U.S.C. § 103(a) combining previously cited Suga with Golden, and optionally Toshima, and Ward. Here, the Examiner contends that Suga teaches the claimed process except for producing an amorphous precursor.

Golden is cited to allege that it is known to use noble metals, rare earth metals, and transition metals to form a precursor material. The Examiner concludes that Golden supplies the reason to modify Suga and include a noble metal in the perovskite of Suga.

The stance on the amorphous nature of the precursor is the same as that expressed in the rejection based on Golden.

The claimed pH limitation is alleged to be inherent in Suga, and the mole ratio is alleged to be nothing more than an optimization of Suga.

Toshima and Ward are cited if the steps of forming the precipitate must be considered.

Claims 3, 4, 10, 11, 13, and 14 are rejected using United States Patent No. 5,503,815 to Ishii et al. (Ishii). Ishii is relied upon to allege that the addition of ammonia is obvious.

Applicants respectfully traverse the rejections of the claims. The rejections are traversed under the headings of the issues before the Examiner.

Golden

Golden fails to teach the steps regarding impregnation of the amorphous substance with a noble metal and cannot anticipate claim 2 for this reason.

It is submitted that Golden cannot anticipate claim 2 since it fails to teach each and every process step. Claim 2 requires that the amorphous substance is in a powdery state and is slurried in a solvent containing ions of the noble metal element. The slurry is then dried so as to impregnate the noble metal element into the amorphous substance.

In Golden, the noble metal is mixed into solution followed by evaporation to dryness to form the precursor. Since the noble metal is introduced with the other precursor-forming materials, it is merely one of many components that are treated to form the precursor. Put another way, the noble metal employed in Golden is not added to a powdery starting amorphous precursor by way of a solvent containing ions of the noble metal as is required by claim 2. The precursor of claim 2 is not noble metal-containing, and the noble metal is impregnated into the precursor using the noble-metal-containing solvent.

While there is a time lag for the Golden process for evaporation and the inventive process to ultimately form the desired precursor, the mixing stage of the invention is conducted under such specified conditions that the amorphous substance in the powdery state is slurried in a solvent containing the noble metal ions for the impregnation. In Golden, there is no mixing stage involving the foam precursor and another element such as a noble metal. Conducting an operation after the precursor is formed in Golden could lead to make the catalyst active.

Therefore, the processing steps of claim 2 requiring slurring of the amorphous substance in its powdery state are not found in Golden and the rejection based on 35 U.S.C. § 102(b) must be withdrawn for this reason. The Examiner is requested to identify the basis in Golden to support this rejection if maintained.

The secondary references do not teach the missing feature of Golden regarding the noble metal impregnation

In the alternative rejection under 35 U.S.C. § 103(a), the Examiner cites Toshima and Ward to address the failure of Golden to teach the manner in which the amorphous substance is made. However, this approach fails to make any assertion that the claimed step of incorporating the noble metal into the amorphous substance is obvious. Apparently, the Examiner is still relying on Golden to teach this aspect of claim 2. However, the arguments above demonstrate that Golden does not teach this step. Furthermore, the Examiner has not presented any reasoning as to why the steps missing in Golden are taught in either Toshima or Ward. Lacking any reasoning on this issue means that the combination of Golden, Toshima, and Ward, even if made, fails to

establish a *prima facie* case of obviousness on the invention when considering the manner in which the noble metal element is incorporated into the precursor.

There is no basis to conclude that the precursor of Golden is amorphous

The rejection based on Golden is also improper since the Examiner has no basis to conclude that Golden teaches forming an amorphous substance as the precursor.

First, it should be explained that Golden teaches a precursor making process entirely different than that used and described in the claims. As set forth in claim 2, the amorphous substance is a reaction product from an aqueous solution containing R and T ions using a precipitant under a pH 6 or more.

Golden, on the other hand, forms a precipitate precursor which is not a reaction product. The Examiner's attention is directed to col. 6, lines 24-26 and col. 8, lines 12 and 13, wherein Golden describes the process of making the precursor, which is not a reaction product but merely an evaporation of a thick syrup to form a solid foam. The syrup is formed by a malic acid solution technique, wherein a thick solution containing a lanthanide salt, salt of elements B and M with a malic acid solution is employed.

Example 1 specifically describes vaporizing a part of the water of solution to produce the syrup and reducing the solution to 29% of its original volume. The thus-formed syrup is then heat treated at 200 °C for 1 hour to convert it to a solid foam, see col. 8, lines 11-13. A fair reading of this process is that there is no chemical reaction occurring during the vaporizing step to make the syrup nor is there an evaporation step to create the solid foam.

This difference in processing taints the Examiner's position that the precursor of Golden is amorphous; this contention is speculation at best and cannot stand up to scrutiny. While it is true that the Examiner can assert, in some instances, that a prior art product would inherently contain a property of a claimed product, this assertion must be buttressed with some reasoning to support such an assertion, e.g., a similarity in processing. In the instant case, there is no similarity in the way the precursor is made between Golden and the claimed amorphous substance to support such a contention. The Examiner has no factual basis to conclude inherency in light of the radically different way Golden forms the precursor as compared to Applicants. In fact, the Examiner does not even offer a factual basis to support the contention that Golden's precursor is amorphous. Instead, the Examiner draws a conclusion without support by merely stating that the two precursors appear to be similar and further contends that the burden to show otherwise has been effectively shifted to Applicants. This stance is clearly improper taking into account the explanation of the difference in the way the precursor of Golden is made and the rejection is improper for this reason.

The Examiner must consider the added limitations regarding the amorphous precursor making and this removes the anticipation rejection

Claim 2 is a method claim and has been amended to include further defining the amorphous substance manufacture. The Examiner has taken the position that the amorphous substance is a product by process. In light of the revision to claim 2, the limitations of how the amorphous substance is made cannot be ignored, the rejection based on 35 U.S.C. § 102(b) must be withdrawn and the only legitimate stance for the Examiner is to rely on 35 U.S.C. § 103(a) and the secondary references to Toshima and

Ward. This approach also fails to establish a *prima facie* case of obviousness as set out below.

Toshima and Ward does not supply the missing features of Golden with respect to the making of the amorphous substance of impregnation of the precursor with the noble metal

Based on the above, the Examiner is required to reject claim 2 under 35 U.S.C. § 103(a) since Golden does not establish a *prima facie* case of anticipation. In the rejection, the Examiner has relied on Toshima and Ward to allege that the claimed method of making the precursor is taught by Toshima and it would be obvious to use Toshima's method in the method of Golden.

Applicants traverse this rejection on two grounds. First, the Examiner has not supplied a reason to make the modification. In the rejection, the Examiner cites Toshima to teach a method that avoids forming a hydroxide when forming the precipitate as the reason for the modification of Golden. However, this approach makes no sense since the avoiding the formation of the hydroxide is peculiar to Toshima and has nothing to do with Golden. The real inquiry is what reason exists to modify Golden. The Examiner has merely cited a feature of the process of Toshima, which results in stable formation of nickel powder as explained in col. 7, lines 15-20. Regardless of the aim of Toshima, the inquiry is whether there is a reason to modify Golden. Applicants submit that merely citing a feature of Toshima does not supply a reason to modify Golden. Lacking the required reasoning to support the modification of Golden, a *prima facie* case of obviousness is not established.

A second reason why the rejection fails is that the Toshima process is unrelated to making a precursor and then heating the precursor to form a perovskite complex oxide. Since Toshima is unrelated to Golden in terms of making a precursor, there is no reason to combine the two references, and even if they were combined, the method of claim 1 is still not taught.

To support the rejection, the Examiner cites col. 6, lines 1-5 and 35-37. This disclosure of Toshima relates to the production of a nickel powder by direct reduction of nickel ion (a dissolved nickel salt) using a reducing agent of hydrazine and avoiding the formation of nickel hydroxide as an intermediate. The nickel metal powder obtained from the nickel salt of Toshima is apparently not amorphous but rather crystalline. Moreover, the thus-produced nickel powder would have no use as a precursor to be heat treated in order to form a perovskite complex oxide. Given the totally different aim of Toshima, one of skill in the art would not be motivated to employ the teachings of Toshima as a substitute for those employed by Golden to form a perovskite complex oxide. To assert otherwise is the blatant use of hindsight and such an assertion could not be sustained on appeal.

It is true that a perovskite structure is disclosed in Toshima. However, it is in the context of forming barium titanate having a perovskite structure, see col. 5, line 64 to col. 6, line 10, via contacting oxide-coated nickel particles with a solution of soluble titanium-containing compound and a soluble barium-containing compound and a heat treatment. This precursor formation is completely unrelated to the formation of the

nickel powder of Toshima, and it does not relate to the claimed amorphous substance or its manufacture. Therefore, this aspect of Toshima adds nothing to the rejection.

Also, the Examiner fails to consider that if the method of Toshima were used as a substitute for the one employed by Golden, the Toshima method would still have to produce an amorphous substance as the precursor to meet the limitations of claim 1. As set out above, Toshima does not produce such a substance and its combination with Golden, even if maintained, still fails to establish a *prima facie* case of obviousness.

The rejection is also lacking when considering the pH limitation on the process. Referring to the Examples of the instant application, it can be seen that the reaction method of making the amorphous substance is carried out under pH conditions of 6 or more. This is accomplished by adding basic agents such as alkaline carbonate or carbonate-containing ammonium. As explained on page 7, lines 8-16 of the specification, the pH has a role in obtaining the amorphous precursor.

In contrast, the malic acid solution technique of Golden is carried out under acid conditions. While the pH is not specified in Golden, a fair reading of this reference would indicate that the claimed pH range is not present. In Examples of Golden involving a solution to form the precursor, the malic acid is added to the prepared solution, and this infers that the range of pH of the processing is less than the claimed pH range of 6 or more.

The collective teachings of Toshima and Ward do not remedy the failing of Golden in this regard. Therefore, it is argued that the applied prior art also fails to

teach this process step and claim 2 is distinguished from this reference when taking into account the pH limitation relating to the making of the amorphous substance.

Ward also does not make up for the failings of Golden and Toshima as noted above for the other limitations in the claims. Even if Ward were used, the combination of the prior art still fails to establish a *prima facie* case of obviousness.

Ishii also does not remedy the failings in the rejection when citing Golden, Toshima, and Ward.

Based on the above, the 35 U.S.C. § 102(b) rejection primarily based on Golden is clearly improper and must be withdrawn. The 35 U.S.C. § 103(a) rejection is also misplaced since Toshima, Ward, and Ishii do not teach or suggest the missing features of Golden. Therefore, claim 2 and its dependent claims are patentable over this prior art.

Claims 16-18

It is contended that the limitations of claims 16-18 are not found in Golden and each of these claims are also patentable over the prior art.

Suga, Golden, Toshima, and Ward

Claims 1, 2, 5-9, 12, and 15 now stand rejected under 35 U.S.C. § 103(a) based on Suga when modified by Golden and either Toshima or Ward.

This rejection is improper because Golden does not supply the feature alleged to be missing in Suga. In the rejection, the Examiner admits that Suga does not teach the use of a noble metal and its manner of impregnation into an amorphous substance. Thus, the Examiner relies on Golden to allege that the missing features of the claim are

taught in Golden and that it would be obvious to use Golden technique for noble metal incorporation in the method of Suga.

This reasoning is faulty for the same reason given above to demonstrate that Golden did not anticipate claim 2. Golden does not teach the manner in which the noble metal is impregnated so even if Golden were combined with Suga, the invention of claim 2 is still not taught.

It has also been pointed out above that Toshima and Ward do not remedy the flaws in Golden and these prior art references fail to change the fact that the rejection based on Suga is improper and should be withdrawn.

OBVIOUSNESS-TYPE DOUBLE PATENTING

In response to the double patenting rejection, a Terminal Disclaimer is submitted herewith, and this effectively removes this rejection.

SUMMARY

It is respectfully contended that the rejections set forth in the outstanding Office Action have been overcome by the arguments made above. Golden cannot anticipate the rejected claims, and its combination with Toshima and/or Ward fails to establish a *prima facie* case of obviousness. Similarly, Suga and the secondary references do not establish a *prima facie* case of obviousness.

Accordingly, the Examiner is respectfully requested to examine this application and pass all pending claims onto issuance.

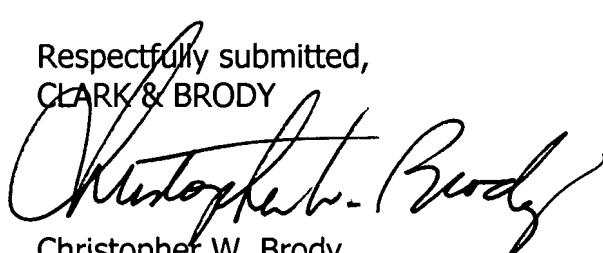
If the Examiner believes that an interview would be helpful in expediting the allowance of this application, the Examiner is requested to telephone the undersigned at 202-835-1873.

The above constitutes a complete response to all issues raised in the Office Action dated December 14, 2006.

Again, reconsideration and allowance of this application is respectfully requested.

A petition for a three month extension of time is hereby made. A check in the amount of \$1,150.00 is enclosed for the extension of time (\$1,020.00) and for the Terminal Disclaimer (\$130.00). Please charge any fee deficiency or credit any overpayment to Deposit Account No. 50-1088.

Respectfully submitted,
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